
SAFETY REVIEW COMMITTEE

ANNUAL MEETING

February 2008 – February 2009

March 2009

CONTENTS

SRC MEMBERSHIP.....	3
SRC CHARTER.....	4
SRC HIGHLIGHTS.....	6
SUBCOMMITTEE REPORTS	
ELECTRICAL SAFETY.....	7
LASER SAFETY.....	8
MECHANICAL SAFETY.....	9
SAFETY COORDINATORS.....	10
TRAFFIC AND PEDESTRIAN SAFETY.....	11
MESH	
MESH TEAMS.....	12
MESH OVERVIEW.....	13
MESH SUMMARY.....	14
Accelerator & Fusion Research.....	14
Computing Sciences.....	16
Directorate / Operations.....	18
Earth Sciences.....	20
Genomics.....	22
Institutional.....	24

SAFETY REVIEW COMMITTEE

NAME	Position	Group
Banda, Michael J.	Representative	Computing Sciences Directorate
Bello, Madelyn	Advisor	Human Resources
Blodgett, Paul M.	Representative	Environment, Health and Safety Division
Dubon Jr., Oscar D.	Representative	Materials Sciences Division
Francino Puget, Maria Pilar	Representative	Genomics Division
Kadel, Richard W.	Representative	Physics Division
Kostecki, Robert	Representative	Environmental Energy Technologies Division
Leitner, Daniela	Representative	Nuclear Science Division
Li, Derun	Representative	Accelerator & Fusion Research Division
Lucas, Don	Chairperson	Safety Review Committee
Lukens Jr., Wayne W.	Representative	Chemical Sciences Division
Martin, Michael C	Representative	Advanced Light Source Division
Nakagawa, Seiji	Representative	Earth Sciences Division
Ohearn, Jerry	Representative	Facilities Division
Petzold, Christopher J.	Representative	Physical Biosciences Division
Sopher, Ted G.	Representative	Information Technology Division
Taylor, Scott E.	Representative	Life Sciences Division
Thomas, Patricia M.	Secretary	Safety Review Committee
Twohey, Daniel E.	Representative	Directorate/Operations
Wong, Weyland	Representative	Engineering Division

SUBCOMMITTEES

NAME	Position	Group
Kritscher, A Michael	Chairperson	Mechanical Safety Subcommittee
Mueller, Robert	Chairperson	Electrical Safety Subcommittee
Littlejohn, David	Chairperson	Laser Safety Subcommittee
Sexson, Janice	Chairperson	Traffic and Pedestrian Safety Subcommittee
Wong, Weyland	Chairperson	Division Safety Coordinators Subcommittee

SAFETY REVIEW COMMITTEE

Charter

Function

The Safety Review Committee (SRC) performs research for and makes recommendations to the Laboratory Director on the development and implementation of Environment, Safety, & Health (ES&H) policy, guidelines, codes, and regulatory interpretation. It conducts reviews of special safety problems and provides recommendations for possible solutions to the Laboratory Director and/or the ESH Division. The SRC also provides advice and counsel to the Associate Laboratory Director for Operations by reviewing appeals from the Laboratory Divisions when any Division and the EHS Division do not agree on the interpretation or application of criteria, rules or procedures. Such advice and counsel may include options for a resolution.

In addition, the SRC chair, in cooperation with the Office of Contract Assurance, is responsible for scheduling and conducting the portion of institutional self-assessment known as Management of Environment, Safety & Health (MESH) reviews. These reviews are designed to ensure management systems consistent with Integrated Safety Management (ISM) are in place in all Laboratory Divisions and that these systems are leading to effective implementation of the Laboratory's ES&H program. MESH reviews are normally triennial by Division and are conducted by an SRC sub-committee. Depending on the MESH review results and the Division response, the SRC shall have the option to recommend changing the interval by one year. All members of the SRC are expected to serve on MESH sub-committees.

To properly execute its responsibilities under this charter, the SRC Chair may appoint expert sub-committees to address specific health and safety matters. Such sub-committees may become long standing expert sub-committees, or they may be of short duration, depending upon the technical support requirement.

Membership/Composition

The Laboratory Director appoints the SRC Chair. SRC membership includes a representative from every Laboratory Division.

Division Directors and Department Heads nominate members of their organizations to the Chair and the Laboratory Director formally appoints them to the SRC. The EHS Division Director or Division Deputy will also attend SRC meetings as resources for the committee.

Appointments are normally for three-year terms that can be renewed once. In addition to SRC members, the Chair may invite (based on SRC agenda) the following advisors:

- Chair of Human Subjects Committee
- Chair of Animal Welfare and Research Committee
- Chair of Radiation Safety Committee
- Chair of Biosafety Committee
- Laboratory Environmental Counsel

Membership Qualifications

The SRC is designed to be a committee of peers involved in the research and development activities of the Laboratory. In research-oriented divisions, members should be drawn from the scientific staff; participation by active experimental scientists is important to the functioning of the SRC. There are no specific prescribed qualifications for SRC members in terms of their position, experience, and training at the Laboratory. However, since the SRC is involved in determining Laboratory policy as described above, individuals who can effectively represent their Divisions should be nominated.

SRC members are expected to:

- Possess an understanding of the 5 Core Functions and 7 Guiding Principles of Integrated Safety Management.
- Communicate regularly with senior Division management and other Division personnel as needed.
- Possess communications skills to comment, suggest, recommend, revise, advise, and influence the Laboratory's approaches, methods, documents, and practices to continuously improve the Laboratory's safety programs.
- Develop an understanding of PUB 3000 and related documents, and the processes for revising these documents.

Meeting Schedule

Meetings will be held as necessary, but at least every two months. When members are unable to attend, substitutes may be designated to attend specific meetings. If a member does not attend at least four meetings throughout the calendar year, the SRC Chair will consult the member's Division Director or Department Head to ask that a replacement be nominated. The SRC chair will designate a recording secretary. Minutes shall be recorded for every meeting; and once a year, the committee will submit a written and oral report of activities to the Director.

Provision for Amendment

The Chair shall submit to the Laboratory Director any recommendations for the amendment of this charter.

SAFETY REVIEW COMMITTEE

Highlights for February 2008 – February 2009

MESH Reviews

Five Management of Environment, Safety, and Health (MESH) Reviews were completed in 2008: Accelerator & Fusion Research, Computing Sciences, Directorate/Operations, Earth Sciences, and Genomics (See MESH Overview and Summary).

PUB-3000 Changes

A primary activity of the Safety Review Committee this year has been review of proposed changes to PUB-3000. Chapters reviewed in 2008 included:

- Chapter 6 Safe Work Authorizations
- Chapter 17 Ergonomics
- Chapter 25 Machine Safeguarding – Shop and Lab Machine Safety
- Chapter 31 Non-Construction Safety Assurance for Subcontractors, Vendors, and Guests at LBNL Facilities
- Chapter 32 Job Hazards Analysis
- Chapter 33 Welding, Joining, and Thermal Cutting

Other Issues

Some other areas discussed by the SRC in 2008 and early 2009 included:

- Subcommittee reports: Traffic and Pedestrian Safety, Laser Safety
- Training: Nanomaterials, Chemical Hygiene, Introduction to ES&H at LBNL
- Reviews: McCallum Turner; Berkeley Site Office; and Health, Safety, and Security
- Electrical safety: DOE audit, Non-Nationally Recognized Testing Laboratory certified equipment, Lockout/Tagout
- Policy changes: Personal Protective Equipment, First Aid Kits
- Near Hits programs
- Environmental Management System

Plans for 2009

Pending direction from the ISM Board, MESH reviews may be conducted for the following divisions: Advanced Light Source, Chemical Sciences, Facilities, and Materials Sciences. Other issues where the SRC anticipates active involvement include: HSS Corrective Action plan implementation, subcontractor safety, electrical equipment inspection, and Job Hazards Analysis.

SUBCOMMITTEE REPORTS

Electrical Safety

Members:

Robert S. Mueller, Chair
Michael J. Bell
Alan Biocca
Robert A. Candelario
Lawrence Domansky
Michael Fahmie
Keith Gershon, EH&S Rep.
Tim Kuneli
William D. Mattson
James W. Murphy
Dennis A. Nielsen
James E. Severns

The Electrical Safety Subcommittee held regular monthly meetings of its members for the purpose of supporting electrical safety here at LBNL. Many members also participated in DOE sponsored conferences on electrical safety.

The Electrical Safety Subcommittee assisted EHS with updating PUB-3000 to improve worker safety and communications concerning electrical safety including:

- Devising a new energized electrical work permit.
- Rewriting Chapter 18 Lockout/Tagout and Verification

We also assisted EHS with the new subcontractor workbooks and have repeatedly reviewed the new non-Nationally Recognized Testing Laboratory certified equipment program here at LBNL.

Currently we are reviewing the changes in the new 2009 NFPA 70E standard to recommend a timetable to adoption of the updated standard.

The Electrical Safety Subcommittee is also working closely with EHS to provide more tools for our electrical workers to properly assess electrical hazards during their work.

Laser Safety

Committee Members:

David Littlejohn	EETD (Chair)
Joel Ager	MSD
Ken Barat	EHS, LBNL (Laser Safety Officer)
James Basore	EHS
Paul Blodgett	EHS
John Byrd	AFRD
Mike Carr	BSO
Eddie Ciprazo	UC Berkeley
Marc Hertlein	CSD
Don Lucas	EHS
Xianglei Mao	EETD
Nick Sauter	Physical Biosciences
Scott Taylor	Life Sciences

In 2008, the Laser Safety Committee considered a number of laser safety issues:

- The LSC discussed the issue of training and safety for vendors of laser equipment who come on site. Ken Barat has developed a training class for vendors coming on site. A template has been developed for a laser service AHD for systems in which the laser is only accessed during service.
- The committee discussed and reviewed options for emergency egress from laser laboratories to satisfy laser safety and fire safety regulations.
- The LSC reviewed and endorsed a series of laser safety protocols. There was some ambiguity as to whether the LSC or BSO had approval authority for the protocols, and this is being resolved.
- The proper signage for entries to laser labs was discussed, and Ken Barat updated the laser safety signs at entry doors to laser labs.

Robert Schoenlein stepped down from LSC chair in October and David Littlejohn took over as chair.

The LSC chair was interviewed by auditors during the DOE laser safety audit. The laser audit went well and no major issues were noted.

Mechanical Safety

Members:

Michael Kritscher, Chair (Engineering): Pressure vessels
Fred Angliss (Facilities): Seismic and high consequence/high value lifts and moves
Michael Dong (Facilities): Ventilation
Ken Chow (Engineering): Pressure vessels
Derek Shuman (Engineering): High consequence/high value lifts and moves

The committee reviews Engineering and Safety notes in the areas of pressure vessel, seismic, ventilation, and lifting fixture safety. The committee may also review changes to PUB-3000 and other documents that would benefit from the group's technical expertise. The committee obtains its assignments from the SRC, the Engineering Division Director, and by request from various researchers.

Activities of the Mechanical Safety Subcommittee (MSS) for the year 2009 included the following:

- Committee members worked on a number of tasks from a variety of sources. The majority of the assistance was provided in the form of aiding in the development of pressure safety notes and reviewing critical lift plans. One of the pressure vessel Engineering notes, written by Soren Prestemon (# 10409), addresses the complex calculations related to the fault conditions of the cryogenic system for the ALS Superbend vacuum vessel. The note is applicable to a broad range of cryogenic systems. In addition to reviewing high consequence/high value lift plans, lifts often also require the development of fixtures. A sample of the many critical lifts reviewed would include: the JDEM Zerodur Mirror Blank, the LARP Superconducting magnet, and the GRETINA detector modules.
- Ken Chow from Engineering has joined the MSS to take the place of Yoichi Kajiyama in the area of pressure vessel safety. Yoichi may still be called upon to address specific issues related to coded pressure vessels. Many members of the committee are concerned about the level of "succession planning" for individuals in roles related to LBNL safety that are unique at what they do and/or are nearing retirement.
- The committee assisted in the development of a laboratory welding chapter written for Pub-3000. The chapter was presented to the Safety Review Committee and it was determined that a welding program manager was crucial to the chapter's implementation. The finalization of the chapter is currently pending the hiring of a program manager, who is being actively sought by EH&S.

Safety Coordinators

Members:

Weyland Wong, Chair (Engineering)
Tom Scarvie and Patricia Thomas (AFRD)
Jim Floyd and Tennessee Gock (ALS)
Jerome Bucher (Chemical Sciences)
Betsy MacGowan and John Hutchings (Computing Sciences Directorate)
Betsy Reyes (DIR/OPD/CFO/HR)
Vivi Fissekidou (Earth Sciences)
Marshall Granados (Engineering)
Richard DeBusk and Michael Ruggieri (EHS)
Guy Kelley (EETD)
Janice Sexson (Facilities)
Stephen Franaszek and Cheryl Ann Chu (Genomics JGI)
Andrew Peterson and Scott Taylor (Life Sciences)
Ann Tomaselli (Information Technology)
Rick Kelly and Paul Johnson (Material Sciences)
Marty White (Nuclear Sciences and Physics)
Joseph Dionne and Nicholas Sauter (Physical Biosciences)

The safety coordinators meet the second Friday of every month with EH&S management, EH&S liaisons, and Berkeley Site Office in attendance.

The coordinators review and provide feedback and recommendations on proposed changes in the EH&S systems, processes and procedures. This year this included:

- LBNL equipment and personnel response to a significant power outage;
- FY08 changes to the Division Self-Assessment Performance Measures;
- Introduction of Job Hazards Analysis, database development woes, work authorization and work groups concepts, plus concerted efforts to make it work to meet established performance metrics;
- Non-construction subcontractor safety program;
- Introduction of Remedy Interactive computer workstation ergonomics software;
- Exploration of Automatic External Defibrillator use at LBNL;
- LBNL First Aid Program review and changes;
- The need for better communication (what and to whom) of safety initiatives and changes is required.
- Health, Safety, and Security Review organizing and preparations including division stand-downs
- Door placards, area Personal Protective Equipment, plus food and beverage areas requirements

The Division Safety Coordinators (DSC) continue to be a strong safety interface between EH&S and Divisions. The DSC program is the major means relied up to support the safety initiatives of the Laboratory. Turnover of DSCs has been smooth with outgoing DSCs remaining as backups. Safety best practices are readily shared among DSCs. It has been indicated that a more focused approach to adequate DSC training is required.

Traffic and Pedestrian Safety

Members:

Janice Sexson, Chair (Facilities Division Safety Coordinator)
Sandra Bell (Bus Supervisor)
Steve Blair (Facilities)
Tamara Brown (Facilities Bus Services)
Richard DeBusk (EHS)
Steve Greenberg (Bicycle Coalition)
Sam Huston (Site Access Manager)
Don Lucas (SRC Chair)
Dan Lunsford (Security Manager)

In March 2008, traffic safety issues in the Corrective Action Tracking System (CATS) were closed pending an Extent of Condition review. The Traffic and Pedestrian Safety Subcommittee responded to each concern, complaint or suggestion received by email or telephone call by inviting the person to attend the next Subcommittee meeting. Smaller corrective actions are entered into CATS.

MANAGEMENT of ES&H (MESH) REVIEWS

2008 SRC MESH Review Teams

Accelerator & Fusion Research

Scott Taylor, Life Sciences Division, Team Leader
Paul Blodgett, Environmental Health and Safety Division
Dan Twohey, Directorate / Operations
Salma El-Safwany, DOE Observer

Computing Sciences

Oscar Dubon, Materials Sciences Division, Team Leader
Maria Pilar Francisco Puget, Genomics Division
Daniela Leitner, Nuclear Science Division
Kim Abbott, DOE Observer

Directorate / Operations

Michael Banda, Computing Sciences Directorate, Team Leader
Oscar Dubon, Materials Sciences Division
Weyland Wong, Engineering Division
Mary Gross, DOE Observer

Earth Sciences

Weyland Wong, Engineering Division, Team Leader
Robert Kostecki, Environmental Energy Technologies Division
Jerry Ohearn, Facilities Division
Kim Abbott, DOE Observer

Genomics

Seiji Nakagawa, Earth Sciences Division, Team Leader
Richard Kadel, Physics Division
Ted Sopher, Information Technology Division
Hattie Carwell, DOE Observer

MANAGEMENT of ES&H (MESH) REVIEWS 2008 Overview

The Safety Review Committee (SRC) conducts reviews of each division's management of ES&H in operations and/or research, focusing on the implementation and effectiveness of each division's Integrated Safety Management (ISM) Plan. For FY08, the SRC conducted MESH reviews in the following divisions:

Division	Noteworthy Practices	Observations	Concerns	TRC*
Accelerator & Fusion Research	3	6	4	0
Computing Sciences	4	2	0	1
Directorate / Operations	1	6	1	3
Earth Sciences	6	3	2	4
Genomics	5	3	4	13

*Total Recordable Cases, FY 08

The FY08 MESH reviews concluded that the assessed divisions provide a safe workplace for employees and guests. All divisions are following their ISM Plans and are generally proactive in managing safety. Noteworthy practices and opportunities for improvements for each of the divisions are described in the MESH Summary.

The most common **noteworthy practices** were improvements in the areas of management/employee involvement, communication, ergonomics, and identification of hazards. Examples included:

- Participation of management in safety committees, communications; and initiatives to improve safety;
- Effective communication through newsletters, website, signs, e-mails;
- Active Ergonomics Advocate programs and development of solutions to ergonomic problems;
- Well-documented hazards in specific labs and shops.

The most common **opportunities for improvement** were in the areas of management of matrixed employees, allocation of resources, and understanding of ISM. Examples included:

- Improve documentation of responsibilities for matrixed employees through MOUs and ISM Plans;
- Increase resource commitment for safety responsibilities (Safety Coordinator, Ergonomic Advocates, walkthroughs) and plan employee workloads to reduce ergonomic hazard;
- Communicate ISM concepts to new and existing personnel.

FY08 SRC MESH Review Summary

Noteworthy Practices and Opportunities for Improvement

Division	Noteworthy Practices	Opportunities for Improvement
Accelerator & Fusion Research	<ul style="list-style-type: none"> • The Accelerator and Fusion Research Division (AFRD) Environmental, Safety and Health Committee is staffed with senior researchers. Meetings are held on a regular basis. Each AFRD program is represented, and attendance is high. This speaks well to the commitment of AFRD senior management to divisional safety and compliance. The division involves many of their supervisors in their self-assessment inspections of their space and operations (QUEST system). • Recognizing the potential for safety problems due to the direct involvement of matrixed Engineering Division (ED) personnel with AFRD programs, the two directors of these divisions meet on a regular basis to discuss mutual safety concerns. A recent Memo of Understanding (MOU) between these two divisions sufficiently details safety responsibilities of all the parties involved. • The identifications of hazards and the establishment of controls are well documented in the Building 71 laser facility. A detailed process for working in (or visiting) the facility has been established. The hazards are well understood by the workers in the facility, and the required controls appear to be fully applied and enforced. 	<ul style="list-style-type: none"> • Concern 2-1: The use of Activity Hazard Documents (AHD) needs improvement. The AHDs for experiments are current, but AHDs are not in place for the construction and testing of new experimental set-ups. AFRD has an internal process, but the mechanism for application of this process is vague and was not well understood by researchers. Matrixed Engineering Division personnel responsible for maintenance of lasers are not included in related AHDs. • Concern 3-1: Emergency eye wash stations are absent in multiple laboratories in Building 71 where alcohol and other solvents are in use. The closest eyewash is one floor above the laboratories. • Concern 3-2: Required door signage is missing in multiple rooms in many buildings. Hazards were found without indications of such on door, and identification of contacts is missing. An AHD and associated user list posted in Bldg 16 was out of date (current AHD was available on line). This was listed as an observation in the 2004 MESH review. • Concern 3-3: A ventilation enclosure was discovered in Building 16 that had an LBNL ventilation tag indicating it was last tested in 1999. The hood is currently being used but the performance test is significantly past due. The hood was moved to its current location without notifying EH&S. As result, the hood is not in the LBNL Ventilation Database. • Observation 1-1: The Division Safety Coordinator is a rotating

Division	Noteworthy Practices	Opportunities for Improvement
		<p>position held by divisional researchers, with a 20% time commitment. (Current demands have caused work to exceed this level). Enhanced commitment by the DSC should be considered.</p> <ul style="list-style-type: none"> • Observation 1-2: Two different MOUs were provided to the MESH committee during this review. AFRD should consider discarding the older, less detailed document. • Observation 1-3: Members of the AFRD safety committee stated that no AFRD personnel are under the supervision of matrixed Engineering Division personnel. Interviews in the field suggested that this was not always the case, especially in the shops. AFRD may need to examine their line management paths to insure they are completely clear on who manages task-oriented jobs. • Observation 3-1: A number of aisle ways in the laser facility in Building 71 appeared to be too narrow and contain tripping hazards. • Observation 3-2: Exit signs in many buildings are not readily visible. Most exit signs depend upon emergency lights to be illuminated during power outages. It may be prudent to test: 1) if the emergency lighting works and 2) if the combination of emergency lights and exit signs provides a clear exit route. • Observation 4-1: A soldering bench in Building 16 had severe housekeeping issues. It was thought by users to have lead solder in use. Further investigation determined that no lead was used. However, there is an issue that users thought it was permissible to have a bench in this condition where lead was involved.

Division	Noteworthy Practices	Opportunities for Improvement
Computing Sciences	<ul style="list-style-type: none"> • Noteworthy Practice: The commitment of senior management beginning with Director Horst Simon is outstanding and more importantly widely recognized by the staff. Walkthroughs by Director Simon set the tone throughout the Directorate that EH&S and the implementation of suitable controls are of utmost importance to job performance and productivity and to a positive work environment. The proactive approach of senior management in EH&S matters is exemplified by the fact that CS lobbied vigorously for and participated in the roll out of online Ergonomics awareness/self-evaluation training, EHS 59. In addition, supervisor and manager training specific to CS has been implemented. For example, several offerings of EHS 26 (Environment, Safety and Health for Supervisors, Managers and Principal Investigators) from the Laboratory's EH&S training group were tailored to CS and offered in conjunction with Horst Simon's Supervisor and Group Leads meetings. • Noteworthy Practice: The electronic newsletter "In the Loop" has become a vital communication tool for EH&S matters. It appears to be an excellent, effective way to reach all staff as verified through interviews with several staff members from different levels of management during the walk through of computer facilities and office space/cubicles in Buildings 50A-B. The MESH review team suggests that CS consider including a regular EH&S feature, such as a "Safety Minute" to further enhance the effectiveness of "In the Loop." 	<ul style="list-style-type: none"> • Observation: While the safety culture in CS is strong and controls are well implemented, the enactment of safety perhaps lacks some of the formality and documentation that might be required in the future. For example, documentation of walkthroughs and all-hands-meeting attendance should be improved and online information about these activities updated. Evaluation and documentation of the transmission of information via "In the Loop" and other avenues, such as communication between line management and the staff, should be formalized. • Observation: Many staff members as well as some members of management interviewed were unfamiliar with not only the ISM plan of CS but also the definition itself of ISM. Although this has not affected the high level of safety in the Division and the elevated ergonomic safety awareness among staff and guests, it may not be a desirable situation in the context of the greater, Lab-wide efforts to practice EH&S using explicitly ISM definitions.

Division	Noteworthy Practices	Opportunities for Improvement
	<ul style="list-style-type: none"> • Noteworthy Practice: Every staff member interviewed had ergonomic safety as first priority on his/her mind. We interviewed a diverse sample of staff (student, postdoc, support engineer, safety coordinator, administrative assistant, group leader) and it was evident that ergonomic safety is a high priority. • Noteworthy Practice: Senior management has implemented the policy of no budget constraints for ergonomic purchases. This has been effectively communicated to the staff; it was evident during informal interviews that the CRD staff is well aware of this resource and would not hesitate to request solutions to ergonomic problems. Indeed, during the review team's walk through, most computer set-ups were customized to fit the needs of the person working in the particular office/station. Besides dealing properly with ergonomics, CSD is also very proactive in other areas of safety. These include safety related to the handling and maintenance of large numbers of computers, such as general electrical safety in computer floors and the implementation of special tools for removing floor tiles. CS continues to utilize the improved "Upright Tile Lifter" for accessing spaces below raised computer floors. Employees are trained in LOTO practices so that they can alert Facilities to perform LOTO when work on systems where electrical energy exceeds 50V is required. 	

Division	Noteworthy Practices	Opportunities for Improvement
Directorate / Operations	<ul style="list-style-type: none"> Special mention should be made of the upcoming move of staff out of Bldg. 937. This move poses a potentially significant hazard for the employees – in particular in regard to material handling and office ergonomics. The Directorate / operations has taken effective action to understand this hazard, has engaged special support from the EH&S and other divisions, and is aggressively moving to ensure that move takes place with minimum safety impact on the staff. These actions should be summarized when appropriate and shared with other divisions that are moving large numbers of staff. 	<ul style="list-style-type: none"> Concern: The Directorate / Operations experienced 8 recordable injuries in FY07. The Directorate / Operations should continue to strive to improve workplace safety and maintain a focus on reducing the number and severity of injuries. There has also been an increase in the number of first aid type injuries. The increase in first aid type injuries could indicate a reduced severity in injuries – a positive trend. Five of the recordable injuries were from office ergonomic causes. The directorate has identified office ergonomics and slips, trips, and falls as the primary hazards for most directorate employees and is focusing on improvements in these areas. Observation: The Directorate / Operations implementation of the ergonomic advocate program could be improved by increasing the number of staff assigned to this duty and placing these advocate duties in the job descriptions and in performance reviews (PRD) of those participating. Observation: Employees from a number of workgroups reported that their workload was too high and contributed to high injury rates. The real issue in workload management is hazard identification and control. Some managers may not recognize the hazard of changes in workload. Observation: The Directorate / Operations continues to struggle with ensuring the safety of matrix staff (this was also reported in the 2006 MESH). Interviews indicate that the Office of the Chief Financial Officer in particular could benefit from an increased focus on the safety of matrix staff. (There is also an institutional issue.)

Division	Noteworthy Practices	Opportunities for Improvement
		<ul style="list-style-type: none"> • Observation: The Directorate Safety Committee has recently improved and is now perceived by most directorate staff as effective. Continued management attention is recommended to ensure the safety committee continues to sustain this improvement. • Observation: The Directorate Safety Committee could benefit from a better distribution of the representation of its members. The committee is over-represented by management. More professional and administrative representation could benefit the performance of this important committee. • Observation: Managers in the Directorate / Operations currently perform a minimum of two safety walkarounds annually, which may not be aggressive enough for this group. A reasonable improvement would be to increase safety walkarounds to a minimum of once per quarter. The directorate should work with EH&S Division to help managers expand or change the focus of their safety walkaround activity to include regular interaction with workers in the workplace about their work and how it is performed.

Division	Noteworthy Practices	Opportunities for Improvement
Earth Sciences	<ul style="list-style-type: none"> • Sharing and feedback of safety information is evident in the Earth Sciences Division communications structure; division Council meetings, safety committee, weekly meetings, quarterly town hall meetings, safety emails, laboratory safety primers and routine one-on-one interactions. • Very effective and well-maintained divisional “Safety” website containing a variety of well-developed ES&H guides. It includes links to the existing EH&S policies, records of the past performance as well as the most recent issues and initiatives. ESD employees recognized during the interviews that they often referred to this website for basic ES&H and EH&S information and policy updates. • Employees clearly identify and recognize the line management authority for safety. The chain of command seems to be well established. Direct communication between the Safety Coordinator and the Division line management as well as the employees seems unobstructed. All line managers interviewed were clear about their responsibilities and the need to communicate safety to their staff. • Laboratory Safety documentation was up-to-date and readily produced at the facilities visited by the MESH review team. The Division was still in the transition period between the old JHQ and the new JHA system and in the process of reassessing the specific hazards and controls for each laboratory. The Division personnel were making very good progress on documenting the identification of hazards and appropriate controls to adapt in the new system requirements ahead of the deadline. 	<ul style="list-style-type: none"> • Concern: Two recently hired employees who were working in the office area in Bldg. 90, although up to date with the JHA and training, showed relatively poor understanding of the ISM concept and personal responsibility for safety. Supervisors and new employees must spend more time during the initial workdays after hire to convey and explain the principles of Safety culture at LBNL and within the division to assure that all new employees are brought up to speed as soon as possible. • Concern: Occasional housekeeping issues were noticed in the lab areas, e.g. boxes with lab supplies stored on the floor in the hallways. Supervisors and their employees should be constantly encouraged to follow good housekeeping rules before they escalate into real safety problems. • Observation: Recordable injuries since the last MESH included two fluke incidents unrelated to Earth Sciences work activities. A trip-fall injury at the Lab cafeteria and unknown flying debris striking an ESD staff person as they were walking between buildings. • Observation: Work area walkthroughs are the most effective methods of maintaining safety especially in the technical areas. It was unclear to the review team how the results of walkthroughs carried out by the PIS and Facility managers were assessed, evaluated and processed. • Observation: No clear definition was obtained from the Division management of how much the safety performance affects individual PRD/P2R reviews and the outcome thereof.

Division	Noteworthy Practices	Opportunities for Improvement
	<ul style="list-style-type: none"> The Bldg. 64 ESD shop was of particular interest since the area safety lead had just retired and returned only to work part time. The division had already set up a restricted access rule (qualified and authorized for the shop as well as several ESD staff who were qualified to grant access and provide oversight when the area safety lead was not present. 	

Division	Noteworthy Practices	Opportunities for Improvement
Genomics	<ul style="list-style-type: none"> • Noteworthy Practice 1-1: The involvement of workers in the safety subcommittee encourages worker-led safety, which raises safety awareness and promotes safety culture within the Division. • Noteworthy Practices 2-1: Because of five accidents occurring during late October to November 2007 at the Production Department, JGI decided to stand down the Department for 21 working days. All workers participated in the stand-down activities, including the creation of production procedures for their work assignments designed to reduce frequency of ergonomic injuries. JGI also reduced cross training of employees on different jobs to reduce injuries (i.e., employees have time to build muscle strength for assigned tasks). As a result, new procedure reduced through put in production department by ~20%. • Noteworthy Practices 2-2: The JGI Production Department has instituted a hazard and risk analysis process for new equipment and tasks. When a new task and/or a piece of equipment is to be used, a “process change notification” is generated, which warrants an analysis of anticipated ergonomic impact. This process includes an evaluation by the ergo experts during the pre-production testing cycle, with the feedback from the workers involved in the activity. • Noteworthy Practices 3-1: JGI has developed its own training classes and trainings, customized to its unique work environment. Also, ergonomic, one-of-a-kind tools are developed in house. For example, in 2007, JGI won the “Ergo Cup 	<ul style="list-style-type: none"> • Concern 1-1: Although the ES&H of Genomics Division in Bldg.84 (Genomics West) is well covered by the Life Science Division, Life Sciences Division ISM Plan does not state their ES&H responsibility for the Genomics Division workers. A MOU (Memorandum Of Understanding) or a similar document that formalizes this arrangement should be drafted and signed by the Genomics and Life Science Division.* • Concern 1-2: The ES&H of the Computational Genomics Group (located on the University of California at Berkeley campus) is provided by the UCB, which should be mentioned in the Division ISM Plan, in an LBNL-UCB MOU. • Concern 2-1: JGI has a group (Computational Genomics Program) located in the UCB campus. Although the ES&H for this group is provided by the university, the senior Division Management should have a periodic walkthrough of the space. • Concern 4-1: Although most problems were minor and corrected on the spot, JGI/Production facility continues to have compliance issues for the SAA. This is partly because of the high volume of waste produced. However, negligence of the workers seems to be the primary cause because managing SSAs is not considered with equal weight as meeting production quotas by work leads. Raising the awareness of the workers, as well as drawing focused attention of the Work Leads towards the SAA during the walkthrough, is recommended. • Observation 1-1: The Safety Committee representative for the Genomics West (Bldg.84) has not been attending the monthly meeting as often

	<p>Award” at the 10th Applied Ergonomics Conference, for an ergonomic bacterial planting Ergo Cup Award instrument (currently, improved, fully-automated version is in use at the facility).</p> <ul style="list-style-type: none"> • Noteworthy Practices 3-2: JGI Safety coordinator and the assistant coordinator conduct monthly walkthroughs to examine ergonomic and other ES&H issues of the workers. Further, JGI has a unique self-reporting system (Safety Track) related to minor ES&H issues, which encourages workers to report problems at an early stage. (NOTE: The Safety Track is not a preferred means to report injury or any other major ES&H issues. The merits and de-merits of the system is being discussed by the Safety Culture Group.) 	<p>as he/she should. The Division should find another individual, or work should be scheduled to allow higher attendance performance.</p> <ul style="list-style-type: none"> • Observation 4-1: There is somewhat high ergonomic injury rate among the Informatics Department (6 injuries since Oct. 2007). However, it is the MESH team’s opinion that the Safety Control by the JGI management is adequate, and the workers are well aware of potential ergo problems. Although at this point the root cause is not known, the morale within the Department may have been negatively affected by the frequent changes of the management and the recent relocation of the group. The JGI management should continue paying a close attention to the workers’ safety within this group. • Observation 5-1: Although mechanisms for gathering feedback from the workers are present (e.g., Safety Committee and Subcommittees, <i>Safety Track</i>, worker feedback during the testing period associated with process changes at Production), interviews with workers indicated that they needed more feedback from the management. For example, the results of the Safety Surveys were not disseminated; the workers at the Informatics Department were not aware of the recent high ergo injury occurrences within the group. The communication can be improved by utilizing the already established venues such as “Potty Training”(safety postings around bathrooms) conducted by the Safety Culture Working Group, periodic group meetings, and the walkthroughs.
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Division	Noteworthy Practices	Opportunities for Improvement
Institutional	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Concern: New laboratories were constructed in Bldg. 71 without apparent review by the appropriate safety subject matter experts, indicative of a failure in the planning process. Specifically, chemical laboratories were built without shower or eye wash stations. • Observation: The AFRD EH&S Administrator cannot obtain access to the SAARS database. Though she has continually requested access over a two-year period, this has been denied because the SAARS system coordinator “couldn’t identify you as a Supervisor or Investigator”. • Observation: Guests pose a challenge in terms of JHA and training compliance. At the time of the review, the Computing Sciences management had been working with EH&S in search of a satisfactory solution. This is a Lab-wide issue which several divisions face, particularly those that support an active user community/guest program. • Observation: Administrative staff members are assigned to each Laboratory division. The hazards to administrative staff members are similar but their safety is managed from their “home” organizations. This may not be the most effective manner in which to manage the safety of these personnel. The EH&S Division should initiate a study to determine if the current arrangement for the safety management of matrix administrative staff could be improved. • Observation: There are cases when “confidentiality issues” result in poor or misleading information transfer between different LBNL Divisions

		<p>sharing common safety issues. Enough factual information is needed to address the adequacy of the other Division's safety programs, and to do so, LBNL should make better use of a lessons learned program to pass along the incidents and lessons learned in a meaningful way.</p>
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